

What Is Claimed Is

1. A semiconductor integrated circuit module, comprising:
a package sealing a semiconductor integrated circuit; and
a power supply module mounted on said package and supplying power to said package.

2. The semiconductor integrated circuit module according to claim 1, wherein

said power supply module comprises

a power supply chip unit or a power supply chip unit and peripheral components thereof and

a plurality of electrodes; and

said package is provided with electrodes on the surface thereof; and

said power supply module is mounted on said package and power is supplied from said power supply module to said package by electrically connecting said electrodes to the electrodes of said power supply module.

3. A semiconductor integrated circuit module, comprising:
a package sealing a semiconductor integrated circuit, and having structural components of a power supply module that supplies power to said package.

4. The semiconductor integrated circuit module according to claim 2, further comprises:

an interface between said semiconductor integrated circuit sealed by said package and said power supply module; and

bi-directional control function between said semiconductor integrated circuit and said power supply module.

5. The semiconductor integrated circuit module according to claim 4, wherein said power supply module is removable from said package.

6. The semiconductor integrated circuit module according to claim 2, wherein said semiconductor integrated circuit module has a structure that enables itself to install a heat sink after said power supply module was mounted.

7. The semiconductor integrated circuit module according to claim 6, wherein said power supply module has an opening and said heat sink can be installed via said opening.

8. The semiconductor integrated circuit module according to claim 2, wherein the output voltage of said power supply module is lower than the input voltage of said package.

9. A manufacturing method for a semiconductor integrated circuit module, comprising:

a step of conducting the following two operations in no specific order:

(1) securing a semiconductor integrated circuit to a package and sealing therein; and

(2) installing a platy heat sink on the package; and mounting a power supply module for power supply to said package from the direction substantially perpendicular to the surface of said package via said platy heat sink.

10. A manufacturing method for a semiconductor integrated circuit module, comprising:

securing a semiconductor integrated circuit to a package and sealing therein; and

mounting a power supply module for power supply to said package from the direction substantially perpendicular to the surface of said package.

11. The manufacturing method for a semiconductor integrated circuit module according to claim 10, further comprising:

providing a platy heat sink on said package through an opening provided in said power supply module.

12. A manufacturing method for a semiconductor integrated circuit module, conducting the following three operations in no specific order:

(1) providing wirings of at least two systems on a package;

(2) securing a semiconductor integrated circuit to one of the wirings of the package and sealing therein; and

(3) connecting the structural elements of a power supply module for power supply to the package, to another of the wirings of the package.

13. The manufacturing method for a semiconductor integrated circuit module according to claim 12, further comprising:

providing said package with a platy heat sink.

14. The manufacturing method for a semiconductor integrated circuit module according to any one of claims 9, 10, or 12, comprising:

providing inside said semiconductor integrated circuit a voltage variation detection circuit unit for monitoring both said power supply to said semiconductor integrated circuit module and said power supply to said semiconductor integrated circuit, prior to securing said semiconductor integrated circuit to said package.

15. A using method for a semiconductor integrated circuit module having a package sealing a semiconductor integrated circuit, and a power supply module mounted on said package and supplying power to said package, the method comprising:

supplying a first voltage from said power supply module to said semiconductor integrated circuit;

said semiconductor integrated circuit initiating a start-up sequence;

said semiconductor integrated circuit outputting a first control signal to said power supply module; and

said power supply module outputting a second voltage to said semiconductor integrated circuit in response to said first control signal.

16. A using method for a semiconductor integrated circuit module having a package sealing a semiconductor integrated circuit, and a power supply module mounted on said package and supplying power to said package, the method comprising:

supplying a first voltage from said power supply module to said semiconductor integrated circuit;

said semiconductor integrated circuit initiating a start-up sequence;

said power supply module outputting a third control signal to said semiconductor integrated circuit; and

said semiconductor integrated circuit conducting a shutdown process upon reception of said third control signal.